amateur radio

A NATIONAL RESOURCE

Annual Report 1975

THE AMERICAN RADIO RELAY LEAGUE
National Association of U.S. and Canadian Radio Amateurs Newington, Connecticut

In The Public Service . . .

This is a report on the status of a unique hobby, one that is much more than just a hobby, amateur radio. The radio spectrum is a natural resource whose use is absolutely vital to the residents of today's Planet Earth. It is important, therefore, to know why the use of a portion of that spectrum has been granted to amateurs by the Federal Communications Commission under international treaty agreements. The answer lies in a phrase to be found in the FCC Regulations: the public interest, convenience and necessity. For well over half a century radio amateurs or "hams" have provided emergency communications in time of disaster. They have been an important and effective training corps for the nation's electronics industry, and they have been a pool of technical skill in time of war and other national emergencies. Amateur radio is a world-wide people to people exchange without parallel—every day amateurs in all parts of the globe are communicating with each other on a very personal basis without regard to boundaries of geography, language or ideology.

Here then is Amateur Radio Today—a resource important to this and every nation.

Harry J. Dannals

Harry J. Dannals (Right)
W2TUK, *President*

R Baldwin

Richard L. Baldwin (Left)
W1RU, *General Manager*
American Radio Relay League

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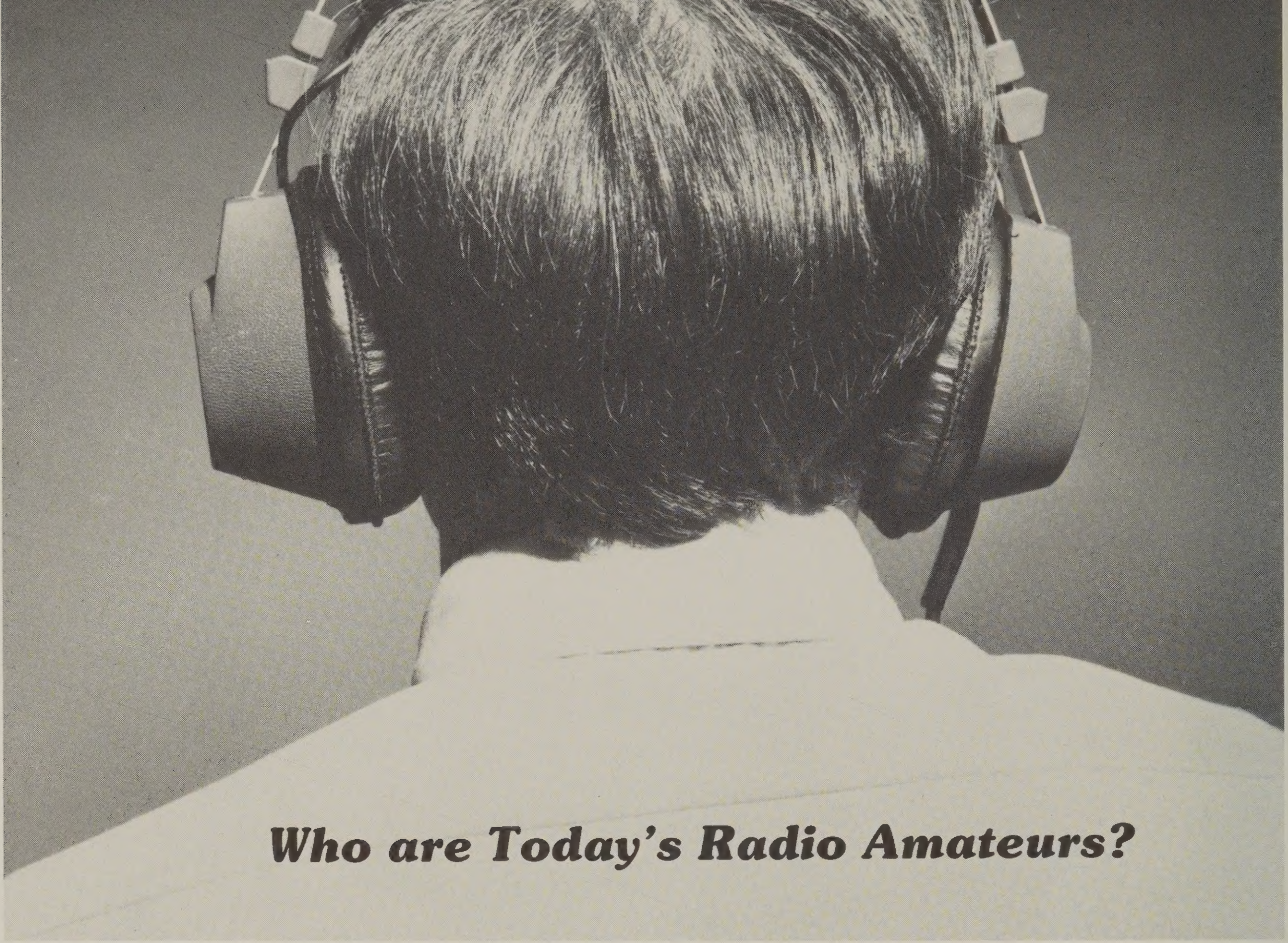
Amateur Radio is Sharing Discovery

The discovery of a new language, new skills, new technology, faraway people and places. The sharing of a resource, of skills and talents. "Collecting" distant contacts, participating in contests, operating events, relaying messages via a national and international series of networks of trained volunteers, experimenting with electronic gadgetry, communicating via satellite, and above all, just plain conversation on a very personal level with fellow amateurs across town, across the continent or across the world. It is a special fraternity.



Who are Today's Radio Amateurs?

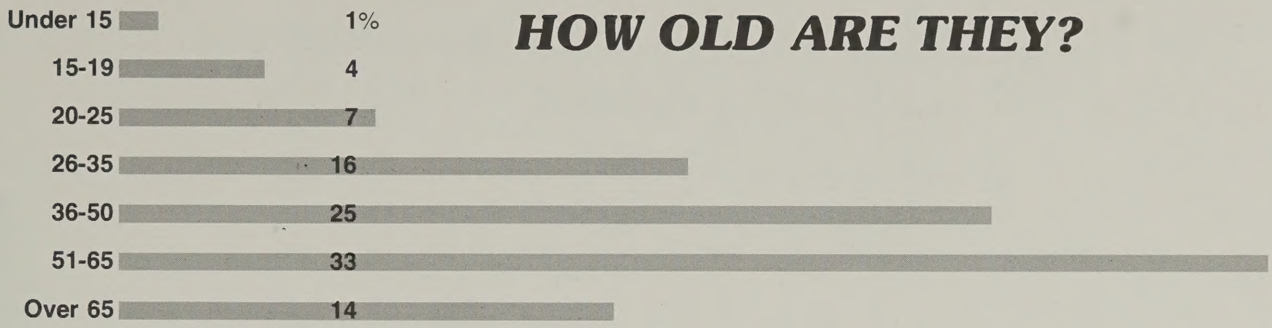
There are no boundaries here . . . . .
Our nation's 260,000 licensed radio amateurs come from every city, town and hamlet, every walk of life, and their ages run from eight to eighty. From high school student to U.S. Senator or captain of industry, from research scientist to housewife, from truck driver to shop keeper, from librarian to farmer, they share a bond that knows no distinction of age, sex, social or economic stratum. They are members of a special fraternity because each has qualified for a license issued by the Federal Communications Commission. To pass an FCC examination, the radio amateur must demonstrate a proficiency in international Morse code, a knowledge of radio theory and of operating and regulatory requirements. There are currently five license classes, each with a higher level of qualification and of operating privileges.

An on-the-air conversation may take place in Morse code, voice transmission, radio teletype or even television. For many amateurs, their hobby has opened the door to satisfying and rewarding careers in electronics and related fields. Their contributions to these fields of knowledge over the years have been of major importance.

As an international people-to-people exchange, amateur radio is unique. Every day, amateurs around the world, on both sides of the Iron Curtain, are in direct, personal contact. There are no geographical, linguistic or ideological boundaries. Russia, for example, has about 10,000 licensed amateurs and is very active in amateur affairs. Other illustrative stories are legion. On one of his visits to the U.S., King Hussein of Jordan, who holds the amateur radio call JY1, was a house guest of Madeline (W2EEO) and Arthur (W2LH) Greenberg of New York. An off-duty U.S. Air Force sergeant got surprisingly fast results when he griped in an on-the-air conversation about poor delivery of needed parts to his base. He may have wondered how it came to pass that the parts were delivered the next day because he never knew his "ham" contact was Commanding General Curtis LeMay (K0GRL). An English schoolboy did not realize who Barry, K7UGA, was until he received a QSL card—the traditional confirmation of a contact—from Senator Barry Goldwater.

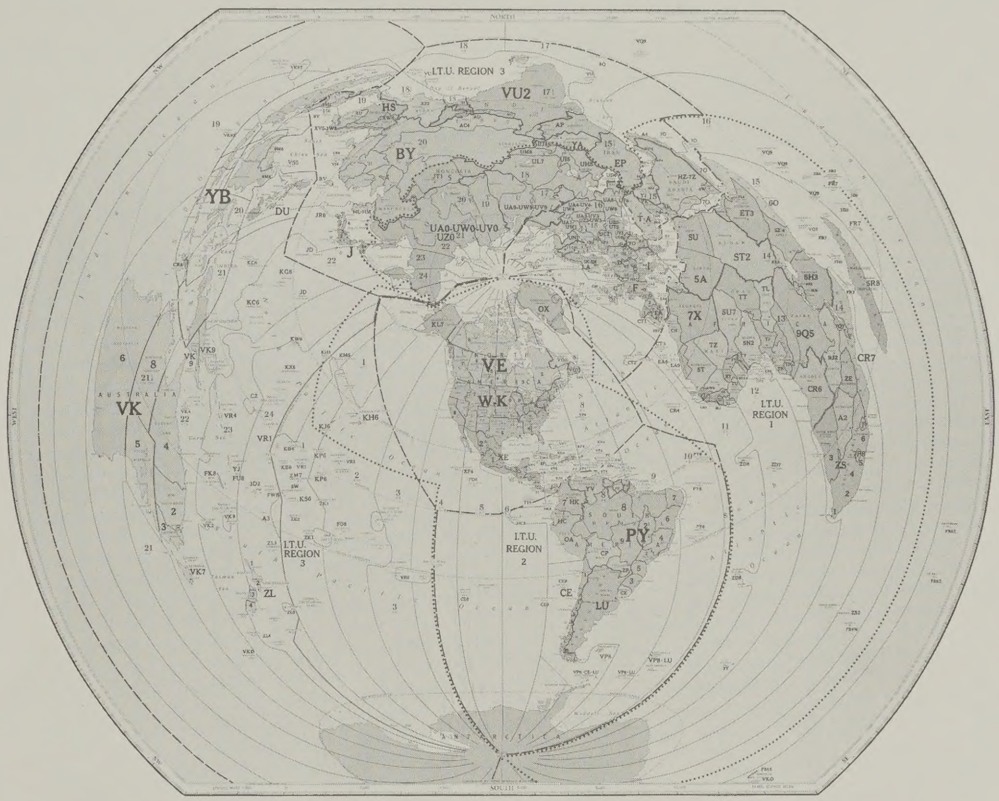
HOW OLD ARE THEY?

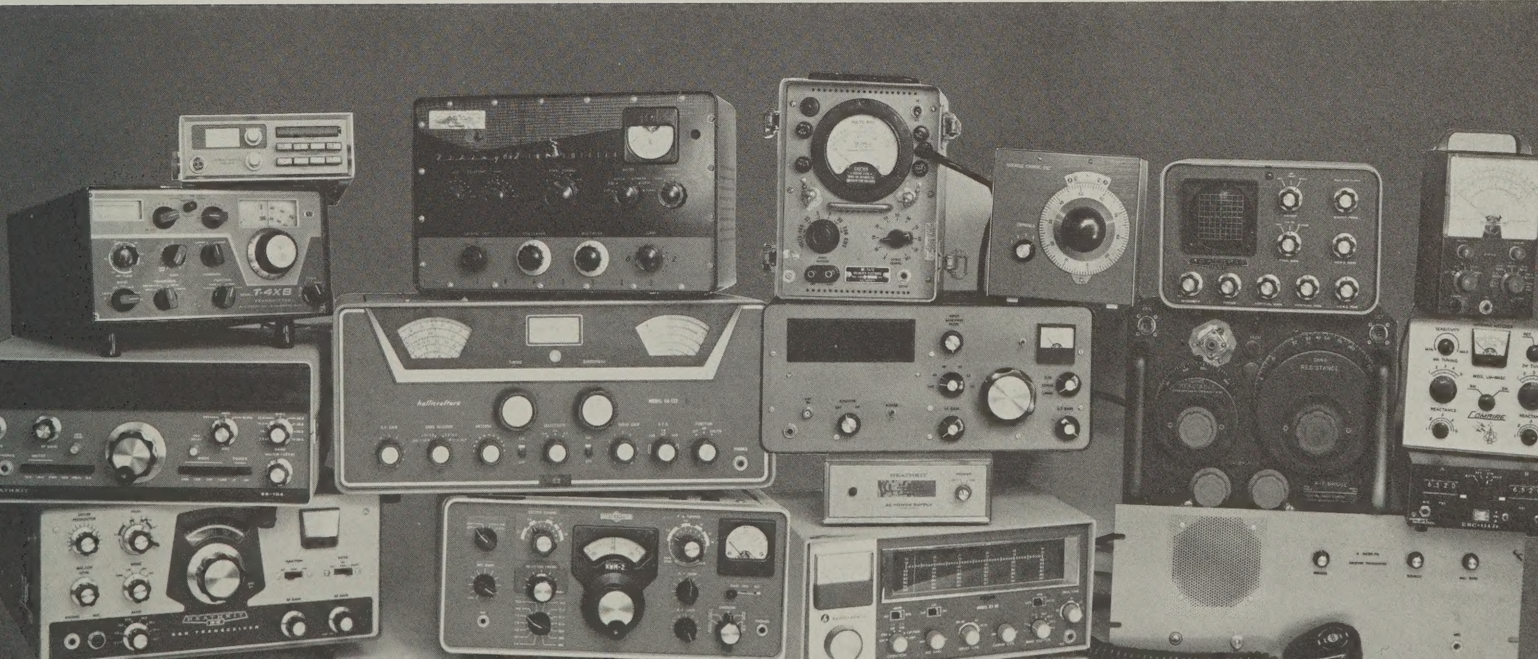
Age Distribution — U.S. Radio Amateurs*



*Source: ARRL 1974 Survey

THE AMATEUR RADIO WORLD

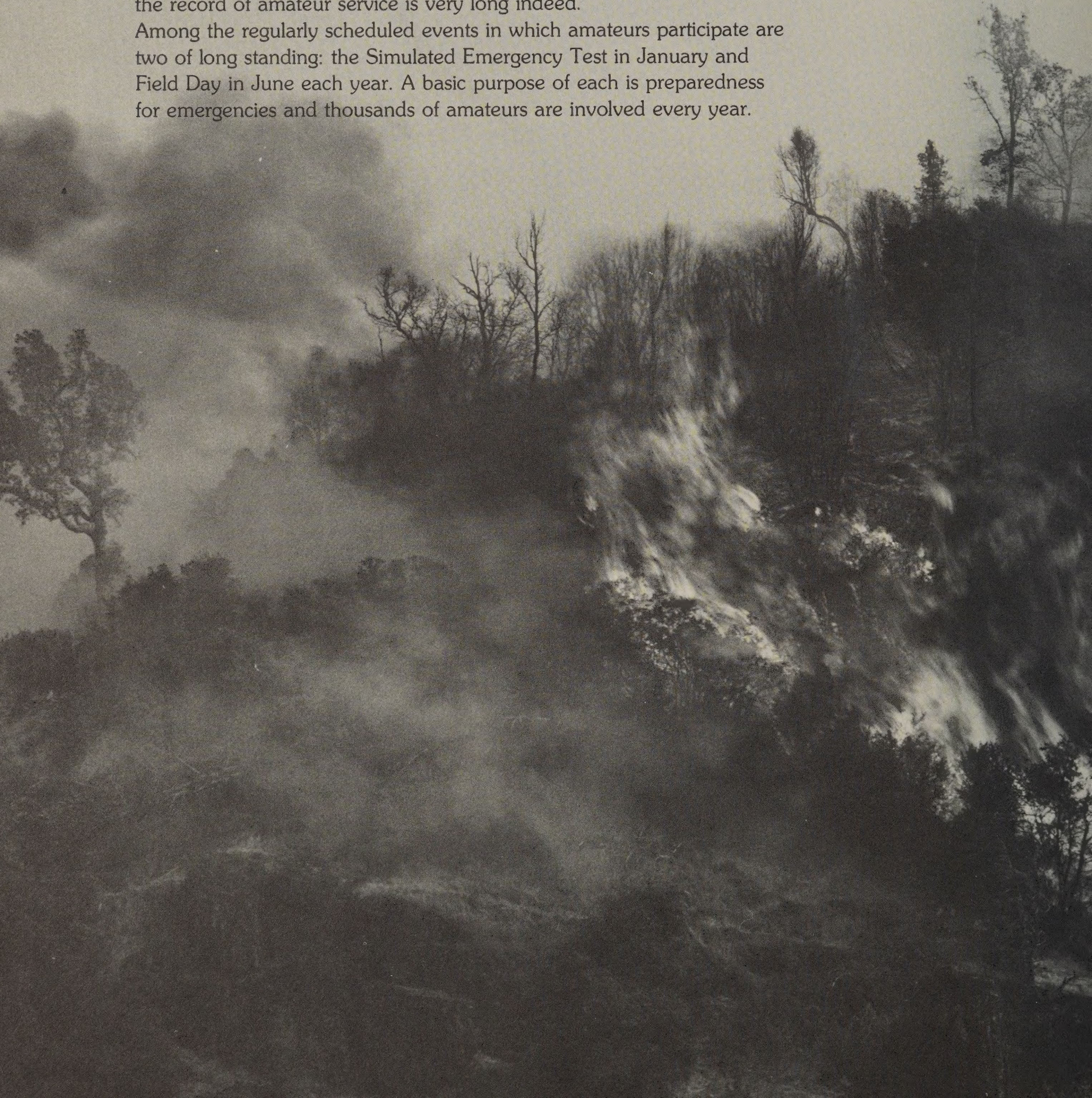




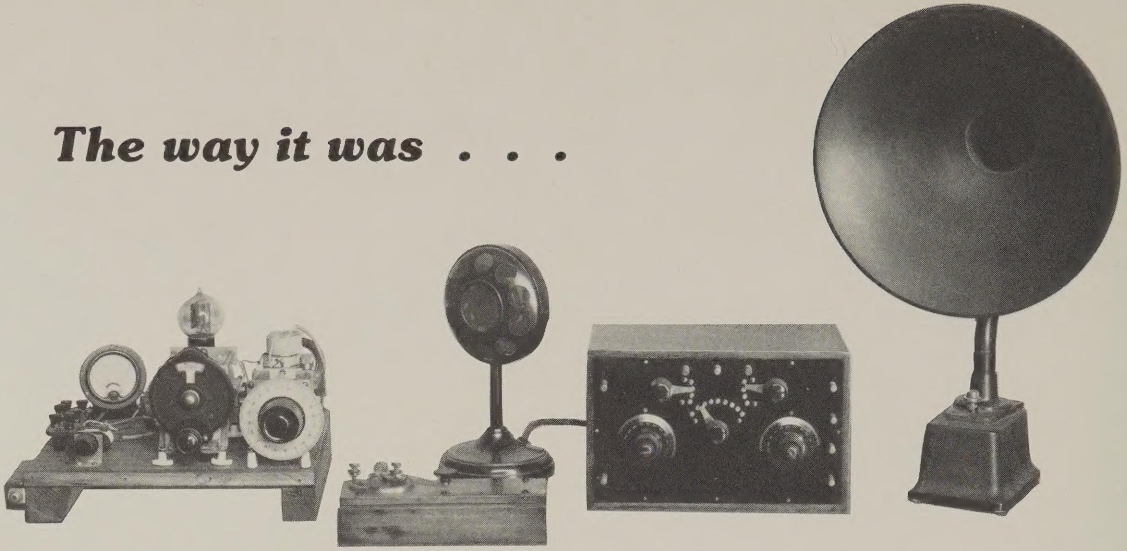
AMATEUR RADIO and the public interest, convenience and necessity

Earthquakes—Alaska, Peru, Nicaragua—Hurricanes Camille and Agnes—when disaster strikes radio amateurs are there to provide communications. They have been there for more than half a century—in big disasters and small. 30,000 amateurs are registered members of the Amateur Radio Emergency Corps, organized and trained for all kinds of emergency situations. Thousands of others are ready, too, when the need comes. Forest fires, floods, traffic accidents, the record of amateur service is very long indeed.

Among the regularly scheduled events in which amateurs participate are two of long standing: the Simulated Emergency Test in January and Field Day in June each year. A basic purpose of each is preparedness for emergencies and thousands of amateurs are involved every year.



The way it was . . .

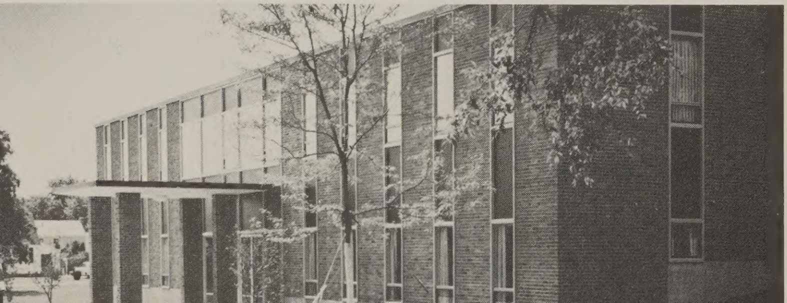


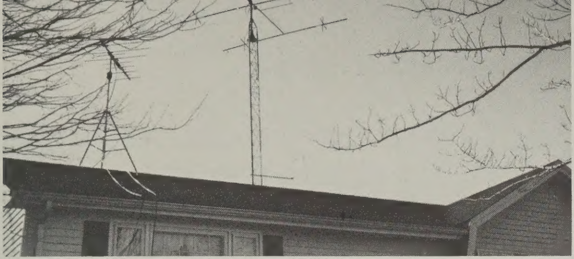
THE AMERICAN RADIO RELAY LEAGUE was founded in 1914 by Hiram Percy Maxim, noted inventor, automotive pioneer and ardent radio amateur. Frustrated by the very limited range of radio equipment of his day, he saw a need for an organized system to relay messages over extended distances and a need for the growing body of amateurs to establish direction and purpose for themselves. Today the League has 121,000 members. It publishes QST, a monthly technical journal, and an annual Radio Amateur's Handbook, plus a number of other specialty books and pamphlets. It operates W1AW, the Maxim Memorial Station which carries daily bulletins of interest to amateurs and a schedule of code practice sessions. It maintains a Technical Department and laboratory to assist any amateur with technical problems. It coordinates an extensive program of field activities and awards. It provides representation on behalf of amateur radio with the FCC and other government agencies, and it is the headquarters society of the International Amateur Radio Union.

ARRL TODAY

Organization: The League is governed by a group of volunteer officers and directors. The Board of Directors is elected regionally by the membership—fifteen directors in the U.S. and one in Canada. They meet formally twice a year to establish overall policy and to deal with current issues. An Executive Committee of the Board meets semi-monthly. Responsible to the Board is a General Manager with a headquarters staff of about 80 people.

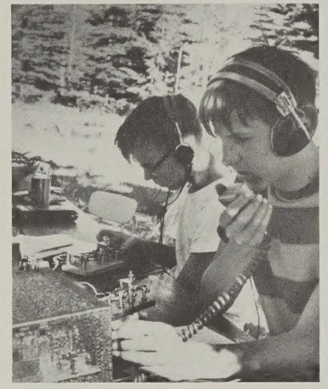
New Amateurs: A major mission of the League has always been the recruitment of new amateurs, especially among youngsters. The League works closely with the Boy Scouts and other youth organizations. It provides material and assistance at several levels to schools and educators. And it provides manuals, handbooks and other teaching aids to assist anyone interested in preparing for his or her FCC examination. It maintains a training aids library for use by radio clubs, community organizations and schools.

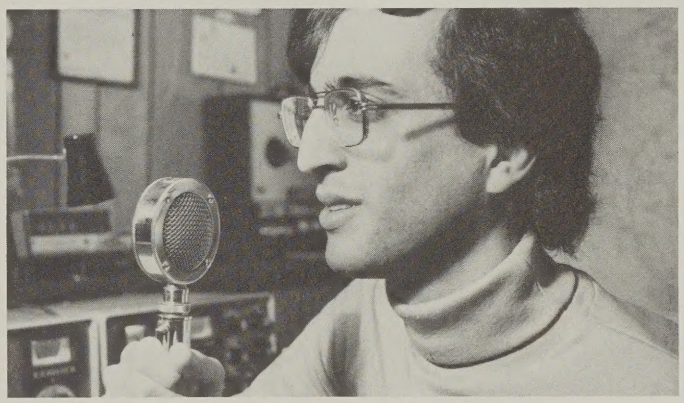




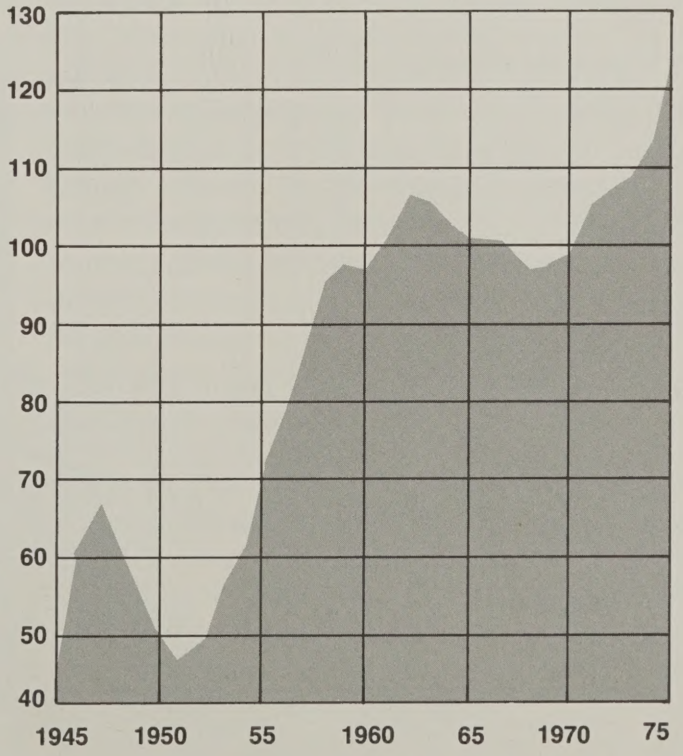
Local Radio Clubs: About half the U.S. radio amateur population are members of community or school radio clubs. More than 1300 of these clubs are affiliated with ARRL in a program which provides them with organizational material, program assistance, guidance in the preparation of club newsletters, training films, slides and other training aids. Many of these local radio clubs are connected with high schools and colleges. Most clubs conduct periodic code and theory classes for newcomers to amateur radio. This is another area in which the League provides assistance. A number of clubs conduct these introductory courses on a continuing basis.

Amateur License Classes:
Novice—A non-renewable, two-year license which requires a five-word-per-minute code proficiency and a rudimentary knowledge of radio principles and regulatory requirements.
Technician—A renewable, five-year license with the same code speed requirement as Novice and the same, more advanced theory and regulatory knowledge as General.
General—The "standard" or most common license class, renewable, five years. Requires 13-words-per-minute code proficiency and a moderate knowledge of theory.
Advanced—Renewable, five-year license - same code requirement as General, more advanced theory knowledge.
Amateur Extra—the highest class of license - five-year renewable - 20-words-per-minute code requirement and engineering-level theory knowledge.
The Novice license is issued by mail on the basis of an examination supervised by an amateur holding a General or higher license; there is no fee. Essentially, the other licenses involve examination under FCC auspices and a $4.00 fee for five years. Each license class entitles the holder to progressively more liberal operating privileges.



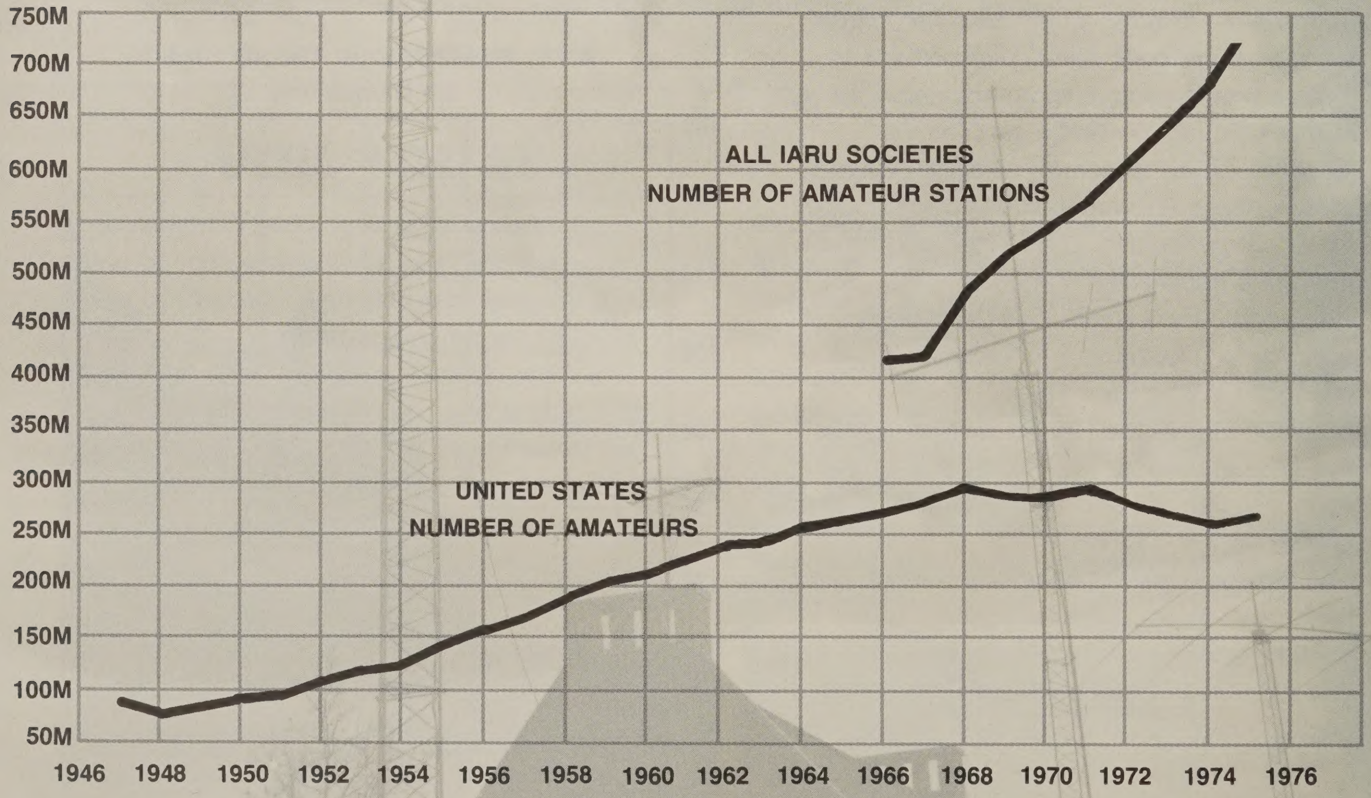


ARRL MEMBERSHIP TREND 1945-75
(in thousands)

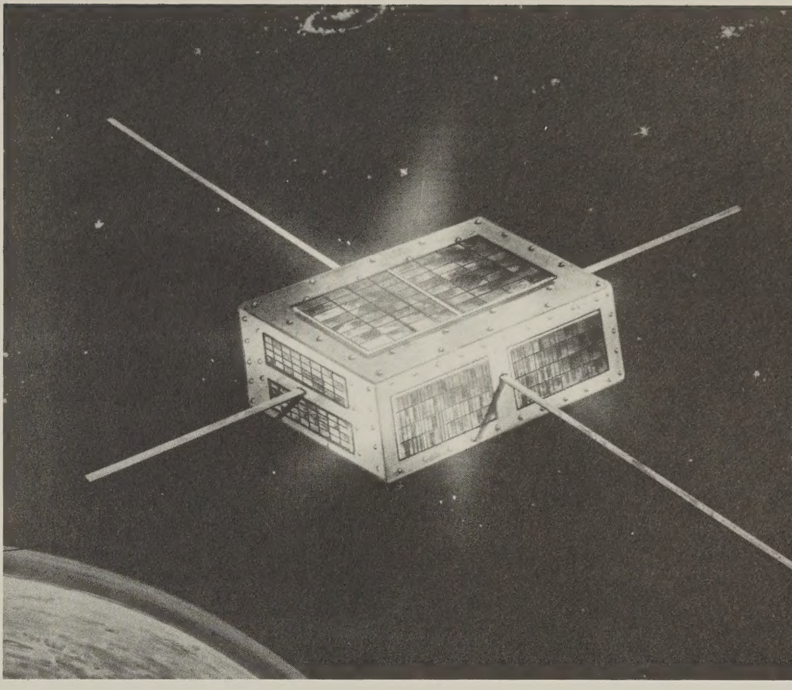


Amateurs and Electronics Technology

If anyone can in fact be credited with "inventing" radio communication, it is amateurs. Marconi, for example, considered himself an amateur. Amateurs in the 1920's were the first to demonstrate the usefulness of short waves—the frequencies at 200 meters and down which had been considered worthless. In later years they contributed much to ionospheric and propagation studies. In fact, today's radio and television broadcasters, the aircraft and marine communicators and every other electronic service utilizes basic techniques for which they are indebted to amateurs. As electronics evolved into a major role in society and industry, the amateur function, of course, became considerably less conspicuous, but it is still true that a substantial number of today's industry professionals can trace their career interest to amateur radio.

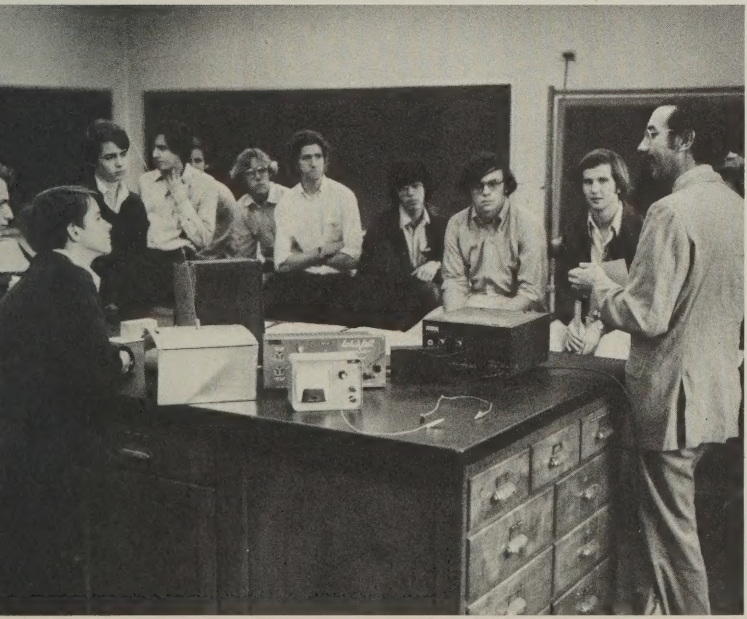


The Oscar Satellites



In 1961 a radio in a small box with a couple of wire antennas was launched as a "hitch-hiker" by the Air Force. In orbit it emitted a two-letter Morse signal which said for all who could tune in to hear, "Hi." This was OSCAR 1 (the letters are an acronym for Orbiting Satellite Carrying Amateur Radio) designed and built by a West Coast group of hams. Today there are two much more sophisticated OSCARS—numbers 6 and 7—in orbit. These are in effect space radio relay stations, receiving messages in code, voice, teletype and even slow-scan TV on one frequency and re-transmitting it on another. OSCARS 6 and 7 are truly international amateur productions involving hams in the U.S., Canada, Germany and Australia. They were launched as accessory packages by NASA into 900 mile polar orbits, each rotating about the Earth about once every two hours. Amateurs with ordinary equipment in more than 80 countries are currently using these satellites for communications.

The Oscar Education Program



ARRL in cooperation with NASA has developed a program in which the use of the OSCAR satellites is brought into the nation's classrooms to assist in teaching space science, mathematics, physics and even social studies. Students at grade levels from elementary through collegiate are provided a "hands-on," direct experience with live space communications by means of classroom demonstrations by local amateurs who set up portable stations for the purpose. More than 3,000 copies of a curriculum supplement entitled SPACE SCIENCE INVOLVEMENT, prepared by educators at Connecticut's Talcott Mountain Science Center for the League, have been distributed to science teachers and others in the educational field. Cooperative workshops with NASA have been presented at special conferences and assistance is made available to teachers on the local level in using the program.

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